

REMARKS

Claims 1-16, 41 and 42 are currently pending in this application. Claims 1-16, 41 and 42 stand rejected.

Independent Claims 1, 41, and 42 have been amended. No new matter has been added. Support for the amendments can be found throughout the specification and drawings and at least in paragraphs [12] through [15], [58], and [59]. No new matter has been added.

Claim Amendments

Independent Claims 1, 41, and 42 have been amended to more particularly claim the image formed by the apparatus. Specifically, the apparatus collects and stores, from the light from the forensic sample, the intensity of light for each pixel for specific wavelengths to produce plural views of the forensic specimen. A composite image from the plural views is formed where substantially all of the corresponding pixels in the plural views are aligned.

Anticipation Rejection

Claims 1-5, 9, 10, 12-16, 41, and 42 stand rejected as allegedly anticipated by U.S. Patent No. 5,689,333 to Batchelder, et al. (“Batchelder”) as evidenced by U.S. Publication No. US2004/0114224 to Rigler (“Rigler”). Applicant respectfully disagrees with the basis of the rejection.

While Applicant does not agree with the examiner's argument that the filter wheel in Batchelder is an "electronically tunable filter" as such devices are known in the art, as well as the other issues discussed in the response to the previous Office Action, these issues need not be addressed as there are other distinguishing features to the claims, as amended above, that obviate the anticipation rejection.

As stated above, the independent claims in the application have been amended to more particularly claim the workings of apparatus. Specifically, the apparatus collects and stores, from the light from the forensic sample, the intensity of light for each pixel for specific wavelengths to produce plural views of the forensic specimen. A composite image from the plural views is formed where substantially all of the corresponding pixels in the plural views are aligned.

In order to achieve the composite image claimed, the electronically tunable filter must be one such that each of the plural "views" (i.e., the single image formed by light at a particular wavelength) are reproducible from view to view, which means that the pixels of one view align with the corresponding pixels of another view. For prior art systems incorporating a filter-wheel, such as the filter wheel described in Batchelder, such reproducibility is unattainable due to image drift. Image drift, as is known in the art, occurs due to the filter wheel switching from one filter to another (in order to select one wavelength and then another). Image drift does not occur during the movement of the filter wheel between filters, rather image drift refers to the fact that the image obtained from a first filter of the filter wheel is offset from the image obtained from a second filter of the filter wheel. This movement of the image renders it exceedingly difficult, if not

practically impossible, to generate a reproducible spectrum at each pixel. As is known in the art, spectrum and image reproducibility is critical in making analytical measurements but particularly critical in making forensic measurements.

Additionally, due to the limited spectral bandpass of a filter wheel, spectral degradation of resolution (sometimes referred to as the “purity” of an image, or view) changes as a function of the distance from the center of the image. As a result of the restricted field of view, it is not possible for the technology described in Batchelder to simultaneously provide high spectral resolving power (narrow spectral band transmittance), a large free spectral range (spectral coverage over hundreds of nanometers), and a large angular field of view. The high spectral resolving power is especially critical for Raman detection. The large free spectral range is especially critical for the detection modes based on non-Raman scattered light (light that is reflected, emitted (implies luminescent), transmitted, and elastically scattered). The non-Raman modes of detection are particularly useful in trace evidence detection as they are highly sensitive, though not highly specific.

For these and other reasons, the filter wheel in Batchelder cannot be effectively used for forensic analysis. Based on all of the above, Batchelder fails to disclose each and every limitation of the rejected claims, as amended, and therefore the rejections must be withdrawn.

The amended independent Claims 1, 41, and 42 are not anticipated by Batchelder. Claims 2-5, 9, 10, and 12-16 all ultimately depend from Claim 1 and are allowed therewith without regard to the additional patentable limitations contained respectively

therein. Accordingly, Applicant respectfully requests withdrawal of these rejections.

Obviousness Rejection

Claims 6-8 and Claim 11 stand rejected as allegedly unpatentable over a combination of Batchelder and secondary references to Rigler (US2004/0114224) and Treado (U.S. Patent No. 6,002,476) for Claims 6-8, and Rigler and Fillard (U.S. Patent No. 5,770,856) for Claim 11. Each of Claims 6-8 and 11 depends, either directly or indirectly, from Claim 1 which as explained above is patentable over Batchelder. Nothing in either of the secondary references overcomes the deficiencies of Batchelder to the claims as amended herein. Accordingly, Claims 6-8 and 11 are deemed patentable by virtue of this dependence without reference to the additional patentable limitations contained therein. Therefore, additional reasons for patentability of each claim need not be discussed.

Accordingly, Applicant respectfully requests the reconsideration and withdrawal of the obviousness rejections of Claims 6-8 and 11.

CONCLUSION

Applicant respectfully submits that all of the claims are in condition for allowance.

A notice to this effect is respectfully requested.

If any point remains that is deemed best resolved through a telephonic conversation, the Office is hereby requested to contact the undersigned directly.

Respectfully submitted,



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